

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

IN THE CLAIMS:

1-27. (Previously Cancelled)

28. (Currently Amended) A method of modifying a polymeric material for improving a hydrophilic property, water absorption property or adhesion property which comprises:

(a) subjecting the polymeric material to an activation step ~~wherein, when the polymeric material is polypropylene, a ratio of about 0.2 or less is observed between the absorbance at 1710 cm⁻¹ due to newly formed carbonyl groups and the absorbance at 973 cm⁻¹ due to methyl groups and when the polymeric material is not polypropylene, a ratio of corresponding value to the ease of polypropylene is observed for introducing a double bond or a functional group containing at least a carbonyl group on the surface of the polymeric material to the extent that a trace of the formation of the carbonyl group is observed from a ratio of about 0.2 or less of an absorbance at around 1710 cm⁻¹ due to carbonyl groups introduced in the surface of polymeric material to an absorbance of the crystalline region not changed by the activation step by employing a base line method of infrared spectroscopy; a~~

(b) treating the activated polymeric material produced in said activation step with a hydrophilic polymer in the presence of a catalyst or an initiator under conditions effective to produce said modified polymer, wherein the weight increase of the treated polymeric material is less than 5 wt%.

29. (Currently Amended) The method of modifying a polymeric material according to claim 28 further comprising the step of monomer grafting in the presence or absence of a catalyst or an initiator under conditions effective to produce said modified polymer after step (b).

30. (Previously presented) The method of modifying a polymeric material according to claim 28, further comprising the step of a solvent-treatment prior to the activation step (a), wherein the polymeric material is dipped in a solvent for about 1 minute to 60 minutes at a temperature of about 60°C or less, and a weight increase of the polymeric material is 10% or less of the original weight.

31. (Previously presented) The method of modifying a polymeric material according to Claim 28, further comprising the step of a solvent-treatment prior to the activation step (a) and a step of monomer grafting after step (b), wherein in the solvent-treatment the polymeric material is dipped in a solvent for about 1 minute to 60 minutes at a temperature to about 60°C, and a weight increase of the polymeric material is up to 10% of the original weight.

32. (Previously presented) The method according to claim 28, wherein said polymeric material is a homopolymer or copolymer of one or more compounds selected from the group consisting of: olefins, vinyl compounds except olefins, vinylidene compounds, polyesters, polyamides, polyimides, polyurethanes, polybenzoates, poly(benzoxazole)s, poly(benzthiazole)s, poly-(p-phenylene benzobisoxazole)s, poly-(p-phenylene benzobis-thiazole)s, poly(alkyl-p-hydroxybenzoate)s, poly(benzimidazole)s, carbonized polymeric materials, polyphenols, cellulose acetate, regenerated cellulose, vynylon, polychlal, casein, wool, silk and hemp, ramie, and jute.

33. (Previously presented) The method according to claim 28, wherein said polymeric material is in the form of any one of fibers, woven fabrics, knitted webs, non-woven fabrics, plates, rods, films, sheets, porous films, members or parts of molded materials in a given shape or composite materials with other materials.

34. (Original) The method according to claim 28, wherein said activation-treatment is at least one of the treatments selected from the group consisting of an ozone treatment, a plasma treatment, a UV irradiation treatment and a high voltage electric discharge treatment.

35. (Previously presented) The method according to claim 28, wherein said hydrophilic polymer is at least one member selected from the group consisting of polyvinyl alcohol, carboxymethylcellulose, poly(hydroxy-ethyl methacrylate), poly- α -hydroxy vinylalcohol, polyacrylic acid, polyvinyl pyrrolidone, polyalkylene glycols, starch, silk fibroin, sericin, agar, gelatin, egg white and sodium arginate.

36. (Original) The method according to claim 29, wherein said monomer is a compound having a carbon-carbon double bond.

37. (Original) The method according to claim 31, wherein said monomer is a compound having a carbon-carbon double bond.

38. (Currently Amended) The method according to claim 36, wherein said monomer is at least one of the monomers selected from the group consisting of acrylic acid, methacrylic acid, vinyl acetate, 2-butene acid, ethylene sulfonic acid, hydroxyalkyl acrylate, hydroxyalkyl methacrylate, acryl amide, vinyl pyridine, vinyl pyrrolidone, vinyl carbazole, maleic anhydride or and pyromellitic dianhydride.

39. (Currently Amended) The method according to claim 37, wherein said monomer is at least one of the monomers selected from the group consisting of acrylic acid, methacrylic acid, vinyl acetate, 2-butene acid, ethylene sulfonic acid, hydroxyalkyl acrylate, hydroxyalkyl methacrylate, acryl amide, vinyl pyridine, vinyl pyrrolidone, vinyl carbazole, maleic anhydride ~~or~~ and pyromellitic dianhydride.

40. (Cancelled)

41. (Cancelled)

42. (Original) The method according to claim 29, wherein said step of monomer grafting is carried out by any one of or both of the following two methods: (1) heating in the presence of catalysts or initiators and (2) UV irradiation in the presence or absence of catalysts, initiators or photo-sensitizers.

43. (Original) The method according to claim 31, wherein said step of monomer grafting is carried out by any one of or both of the following two methods: (1) heating in the presence of catalysts or initiators and (2) UV irradiation in the presence or absence of catalysts, initiators or photo-sensitizers.

44. (Previously presented) The method according to claim 28, wherein said initiators are at least one of peroxides, cerium ammonium nitrate (IV) or persulfates.

45. (Currently Amended) The method according to claim 44 29, wherein said initiators are at least one of peroxides, cerium ammonium nitrate (IV) or persulfates.

46. (Cancelled)

47. (Cancelled)

48. (Cancelled)

49. (Cancelled)

50. (Cancelled)

51. (Cancelled)

52. (Cancelled)

53. (Cancelled)

54. (Previously presented) Writing materials containing modified polymeric materials obtained by the method according to claim 28.

55. (Cancelled)

56. (Cancelled)

57. (Previously presented) Synthetic papers made of modified polymeric materials obtained by the method according to claim 28.

58. (Previously presented) Orthodontic brackets containing modified polymeric materials obtained by the method according to claim 28.

59. (Cancelled)